

REMARKS

Claims 1, 2, 4-9, 11 -14 are pending. Claims 3, 10, and 17-20 have been cancelled without prejudice. Claim 1 was amended to include the subject matter of claim 3, and claim 8 was amended to include the subject matter of claim 10. No new matter has been added by these claim amendments, and the specification clearly provides support at page 8, lines 11-15, as well as original claims 3 and 8. The amendments to claims 1 and 8 made claims 19 and 20 essential duplicates of claims 4 and 11.

Applicant respectfully submits that an Information Disclosure Statement has been filed concurrently herewith regarding certain documents that the Assignee has been recently made aware of.

I. Objection to Specification under 35 U.S.C. §132(a) regarding Claims 17-18 and the 35 U.S.C. §112, 1st and 2nd paragraph rejections of Claims 17-18

The cancellation of claims 17 and 18 renders the above objection and rejections moot.

II. 35 U.S.C. §102(b) rejections of Claims 1-14, 19 and 20

Claims 1-14, 19 and 20 stand rejected under 35 USC §102(b) as allegedly being anticipated by view of GB 1427348, (herein after referred to as "GB'348"). Applicant respectfully traverses this ground of rejection in view of both the above amendments and for the reasons indicated herein below.

It is alleged in the Office Action that GB'348 discloses a titanium cathode plate having copper deposited onto surfaces of the plate. The deposited copper adheres to the whole of the immersed surface of the cathode plate, and it is alleged that in order to separate the copper sheets from the cathode plate, at least one side edge and preferably both side edges are coated with a plastic or elastomeric masking material. GB'348 is alleged to disclose at page 2, lines 8-19 that the bottom

edge of the cathode plate is left uncoated and provided with a V-shaped longitudinal groove to assist in effecting separation of the copper deposits.

While it is admitted in the Office Action that GB'348 does not specifically state the angles of the V-groove, it is alleged that GB'348 "would inherently have these dimensions due to the thickness restriction of the cathode plate thickness" as a starter plate is not normally very thick. It is further alleged that because the groove is made of the same material as the cathode plate, "the copper will inherently flow into the groove and will further inherently have the line of weakness or frangible portion as set forth in the instant claims." It is also alleged that: "[T]he groove in the GB patent further will also inherently allow gas to be captured that rises from below the cathode plate due to the same design as that inherently claimed in Applicant's claims being used."

Applicant respectfully submits that the Examiner's use of the Doctrine of Inherency is inconsistent with the practice established under MPEP 2163.07(a), which states that

"To establish inherency, the extrinsic evidence
'must make clear that the missing descriptive matter is
necessarily present in the thing described in the reference, and
that it would be so recognized by persons of ordinary skill.'
"Inherency, however, may not be established by probabilities
or possibilities. The mere fact that a certain thing may result
from a given set of circumstances is not sufficient.' "

M.P.E.P. §2163.07 citing *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999).

Applicants have amended base claims 1 and 8 to recite in part that "the sides of the groove are between 75° and 105° apart." It is respectfully submitted that a person of ordinary skill in the art

reading GB'348 would not find that the reference inherently discloses the recited angular range. Nor would the artisan determine that GB'348 "*inherently*" would allow gas to be captured that rises from below the cathode plate due to the same design as that *inherently claimed* in applicant's instant claims being used (emphasis in Italics added by Applicant).

It is respectfully submitted that the conditional piling of inherency upon inherency as attributes of GB'348 appear to among be the "possibilities" referred to in MPEP 2163.07(a) that do not constitute a proper inherency based rejection consistent with practice. Thus, Applicant respectfully requests that the Examiner reconsider the anticipation rejection, particularly in light of how GB'348 could inherently disclose all that it has been credited with inherently disclosing in the Office Action of October 13, 2005, and in view of the additional limitation of an angular range of the V-groove added to claims 1 and 8.

Additionally, Applicant respectfully submits that GB'348 discloses a method of removing an electrodeposited metal from a cathode, and more specifically, the removal of Zn, Cu or Ni from a flat cathode plate of a metal having a dissimilar coefficient of thermal expansion.

In contrast with GB'348, the present claimed invention is directed to the electro-deposition of metal on a cathode having similar coefficients of thermal expansion (i.e. the electro-deposition of a copper metal upon a copper electrode).

For example, with regard to the reference, GB'348 discloses subjecting the deposit and plate to a temperature change whereby the differential contraction or expansion forces generated will weaken the adhesion of the deposit.

It should be readily appreciated that a preferred Cu cathode/CU electro-deposit combination according to the present claimed invention would not be amenable to such as means of separation. The deposit, formed from an electrolytic bath at around 60-70° C, may be rinsed in a bath at the same

temperature followed by quenching in cold air, water, or using solid CO₂. Alternatively, the temperature change may be achieved by heating, e.g. in boiling water. To this end, a temperature change of about 60°C is stated to be preferred. A repeated heating/cooling (or vice versa) cycle may be used. The cathode plate may have a non-conductive mask along at least one edge and its lower edge may bear a longitudinal V-shape.

In addition, GB'348 requires that the electroplated metal and cathode metal must be two distinct metals and hence have different thermal coefficients that allow quenching or heating to assist in stripping.

Furthermore, GB'348 fails to define the dimensions of the V-groove. It could be, for example, 1° acute, or 179° obtuse, and without any information other than provided in the disclosure (which does not even have drawings) one can not decipher the dimensions of any such groove, inherently or otherwise. The range recited by the Applicant provides improved separation heretofore unknown.

Applicants also respectfully submit that the alleged inherent teaching that starter sheets are not thick does not inherently place a restriction on the span of the V-groove. By analogy, one cannot say that the depth of a hole in the ground is inherently known based on the diameter of the hole.

Furthermore, GB'348 fails to disclose or suggest how a V-groove would enhance the separation of the two sides of the electro-deposited metal. In fact, GB'348 appears to relate to producing copper starter sheets rather than commercial electro-refining of copper.

In contrast, in the present claimed invention, the V-groove forms a line of weakness/frangible portion, which is itself sufficient to enable effective separation of the two sides of the electro-deposited metal. The present invention defines the dimensions of the V-groove as "wherein the sides of the groove are between 75° and 105° apart", such that the Applicant has empirically found that a span of such dimensions provides for a relatively enhanced separability of the electro-deposited from

the cathode, such that the frangible portion deposited within the V-groove is relatively weak. It is respectfully submitted that had the Applicants of GB 1 427 348 fully comprehended or understood the significance of the V-groove, then the foregoing method in which unique thermal coefficients are considered essential, would be unnecessary.

The Applicants reiterate that the intent of the V-groove is to create a plane of weakness to separate the two sides of an electrodeposited metal. The crux of this argument is that the present invention defines the dimensions of the V-groove as “wherein the sides of the groove are between 75° and 105° apart”, such that the Applicants have empirically found that a span of such dimensions provides for a relatively enhanced separability of the electrodeposited metal from the cathode, such that the frangible portion deposited within the V-groove is relatively weak.

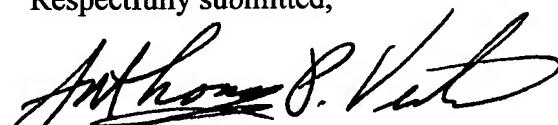
For at least the above reasons, it is respectfully submitted that all grounds of rejection under 35 U.S.C. §102(b) have been overcome, and the pending claims are allowable in view of the cited reference.

III. Conclusion

In view of the above, it is respectfully submitted the present claims are neither taught nor suggested by GB 1,427,348 and the present invention is novel and inventive over the cited document. Thus, a Notice of Allowance is respectfully requested.

Respectfully submitted,

By:



Anthony P. Venturino
Registration No. 31,674

Date: March 13, 2006

APV/SG
ATTORNEY DOCKET NO. APV31535

STEVENS, DAVIS, MILLER & MOSHER, L.L.P.
1615 L STREET, N.W., SUITE 850
WASHINGTON, D.C. 20036
TEL. 202-785-0100 / FAX. 202-785-0200